

Groundwater Flow and Aquitards

Slides 1 through 3 show the thickness at boreholes for the clay layers between the A-sand and the B-sand, the B-sand and the C-sand, and the C-sand and the D-sand, respectively. Clay thicknesses were calculated for each borehole that had both upper and lower contacts for the clay. Picks for the top and base elevations for each sand intersected by a borehole were determined by UEC geologists from borehole logs. The average thickness of the clay between the A-sand and the B-sand is about 40 feet. For the clay between the B-sand and the C-sand, it is about 33 feet, and between the C-sand and the D-sand about 39 feet. These clays serve as an effective confining unit between the sand layers.

Slide 4 shows a contour plot of hydraulic head for the B-sand for February 2012. All B-sand wells within the graben area were used to develop the contour plot. As can be seen from the data, flow directions within the graben are generally west to east. Well BMW-7 appears to have a survey elevation error since it measures from about four to six feet above all of the other wells. Slide 5 shows a similar contour plot of hydraulic head for the A-sand in February of 2012. Consistent with the B-sand, head contours define a generally west to east hydraulic gradient.

Simulated head results for the B-Area Production Model under steady-state conditions are shown in Slide 6. The model is bounded by the northwest and southeast faults. Groundwater flow in the model is west to east. Slide 7 shows calibration results and statistics for the model, which indicate that the model is well calibrated.